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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/982,227	10/17/2001	Dmitri E. Nikonov	42390.P10601	7399

7590

03/14/2003

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EXAMINER

WONG, ERIC K

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 03/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/982,227	Applicant(s) NIKONOV ET AL.	
	Examiner Eric Wong	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 11 –13, 14, 19, 20-25, 28 and 29 are rejected under 35 U.S.C. 102(e) as being anticipated by United States Patent Application Publication 2002/0089711 to Conzone et al

Conzone discloses in figure 10, an apparatus comprising:

- An integrated optical circuit having:

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- A first arrayed waveguide grating (AWG) and a second AWG formed in the integrated optical circuit; and
- A set of optical amplifiers formed in the integrated optical circuit coupled between the first and second AWGs via a set of waveguide elements to combine pump and optical signal light.

As to claim 21, Conzone discloses in figure 11, a waveguide array wherein a shape and width is varied.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-10, 15-18, 26, 27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admission of prior art and United States Patent Application Publication 2002/0089711 to Conzone et al.

As to claims 1-10, 26, 27 and 30, applicant's disclosure of prior art in figure 1 depicts, a system comprising:

- A multiple channel optical signal and an AWG coupled to multiplex or demultiplex the multiple optical signals.
- A set of optical fibers to couple a set of transceivers to couple a set of optical channels; and

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- A set of optical amplifiers with gain portions coupled to waveguide elements doped with rare-earth ions; and
- A set of arrayed waveguide gratings coupled to the set of amplifiers, but fails to explicitly disclose an integrated optical circuit containing said amplifier and gratings.

Conzone discloses in figures 5 and 6, an integrated optical circuit coupled to receive a set of optical channels having a set of amplifiers comprising a set of waveguide elements to combine pump light and optical signal light, and arrayed waveguide gratings formed in the integrated circuit.

It would have been obvious to one skilled in the art at the time the invention was made to modify applicant's admission of prior art to include an integrated optical circuit containing an optical amplifier and an arrayed waveguide grating in order to reduce cost and to reduce the amount of noise and interference associated with long distance optical transmissions.

3. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Conzone as applied to claim 14 above

As to claims 15-18, Conzone discloses an optical amplifier coupled to combine pump and optical signal light, a pump interface and coupled light input to AWG, but fails to explicitly disclose an amplifier that has a predetermined length to compensate for non-uniform gain spectrum of the AWG.

One skilled in the art would be able to set a prescribed length to compensate for non-uniform gain spectrums of the AWG.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an amplifier that has a predetermined length to compensate for non-uniform gain spectrum of the AWG, since it has been held to within the general skill of one in the art to select a known length on the basis of its suitability for the intended use as a matter of design choice.

Inventorship

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- a. United States Patent Number 5,452,116 to Kirkby et al. for a system that comprises an integrated circuit with an amplifier and an arrayed waveguide grating.
- b. United States Patent Application Publication 2002/0154847 to Dutt et al. for a system that comprises an integrated circuit with an amplifier and an arrayed waveguide grating.

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c. United States Patent Number 6,434,175 to Zah for a system of multiplexers and amplifiers.

d. United States Patent Application Publication 2002/0012161 to Tsuzaki et al. for an optical transmission system that incorporates a pump light and multiplexers/demultiplexers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Wong whose telephone number is 703-305-4741. The examiner can normally be reached on Monday through Friday, 830AM - 430PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on 703-308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-0725 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

EW
March 5, 2003


HEMANG SANGHAVI
PRIMARY EXAMINER

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